

SSSSSSSSSSSSSS	000000000	RRRRRRRRRRRR	TTTTTTTTTTTTTT	3333333333	2222222222
SSSSSSSSSSSSSS	000000000	RRRRRRRRRRRR	TTTTTTTTTTTTTT	3333333333	2222222222
SSSSSSSSSSSSSS	000000000	RRRRRRRRRRRR	TTTTTTTTTTTTTT	3333333333	2222222222
SSS	000	RRR	TTT	333	222
SSS	000	RRR	TTT	333	222
SSS	000	RRR	TTT	333	222
SSS	000	RRR	TTT	333	222
SSS	000	RRR	TTT	333	222
SSS	000	RRR	TTT	333	222
SSSSSSSSSS	000	RRRRRRRRRRRR	TTT	333	222
SSSSSSSSSS	000	RRRRRRRRRRRR	TTT	333	222
SSSSSSSSSS	000	RRRRRRRRRRRR	TTT	333	222
SSS	000	RRR	TTT	333	222
SSS	000	RRR	TTT	333	222
SSS	000	RRR	TTT	333	222
SSS	000	RRR	TTT	333	222
SSS	000	RRR	TTT	333	222
SSS	000	RRR	TTT	333	222
SSSSSSSSSSSS	000000000	RRR	TTT	3333333333	22222222222222
SSSSSSSSSSSS	000000000	RRR	TTT	3333333333	22222222222222
SSSSSSSSSSSS	000000000	RRR	TTT	3333333333	22222222222222

```

LL          IIIIII          SSSSSSSS
LL          IIIIII          SSSSSSSS
LL          II             SS
LL          II             SS
LL          II             SS
LL          II             SS
LL          II             SSSSSS
LL          II             SSSSSS
LL          II             SSSSSS
LL          II             SSSSSS
LL          II             SSSSSS
LL          II             SSSSSS
LL          II             SSSSSS
LL          II             SSSSSS
LLLLLLLLLLLL IIIIII          SSSSSSSS
LLLLLLLLLLLL IIIIII          SSSSSSSS

```

(1) 3
(1) 29

Copyright Notice
Program description

SORSOUTPUT
V04-000

Output text

I 11

16-SEP-1984 01:18:42 VAX/VMS Macro V04-00
5-SEP-1984 03:37:06 [SORT32.SRC]SORSOUTPUT.MAR;1

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```
0000 1      .TITLE SORSOUTPUT      Output text
0000 2      .IDENT 'V04-000'      ; File: SORSOUTPUT.MAR Edit: PDG016
0000 3      .SBTTL Copyright Notice
0000 4      :
0000 5      :*****
0000 6      :
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0000 21     :
0000 22     :*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE OR RELIABILITY OF ITS
0000 23     :*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.
0000 24     :
0000 25     :
0000 26     :*****
0000 27     :
```



```

0000 29 .SBTTL Program description
0000 30 :++
0000 31 :
0000 32 FACILITY:
0000 33 :
0000 34 Output text by using $PUTMSG.
0000 35 :
0000 36 ABSTRACT:
0000 37 :
0000 38 NONE
0000 39 :
0000 40 ENVIRONMENT:
0000 41 :
0000 42 Native mode, User mode, AST reentrant
0000 43 :
0000 44 AUTHOR:
0000 45 :
0000 46 Peter D Gilbert, June 1982
0000 47 :
0000 48 MODIFIED BY:
0000 49 :
0000 50 T03-016 PDG016 25-Aug-1982
0000 51 Add a compile-time variable indicating whether to use one
0000 52 $PUTMSG per line, or to use as few $PUTMSG calls as possible.
0000 53 :
0000 54 T03-015 Original
0000 54 :--

```

```
0000 56 .DSABL GLOBAL ; Externals must be explicitly declared
0000 57 .EXTRN SYS$FAOL ; System service to format ASCII text
0000 58 .EXTRN SYS$PUTMSG ; System service to output a message
0000 59 $SHRDEF ; Define SHR$_TEXT
0000 60
00000001 0000 61 OPT = 1 ; If non-zero, minimize $PUTMSG calls
0000 62 ; If zero, use one $PUTMSG per line
0000 63
00000000 0000 64 .PSECT SOR$RO_CODE NOVEC,NOWRT,RD,EXE,SHR,LCL,REL,CON,PIC,LONG
0000 65
00000004 0000 66 CTRSTR = 4 ; Offset from AP of control string
00000008 0000 67 PRMLST = 8 ; Offset from AP of parameter list
000000FF 0000 68 K_PUTMSG = 255 ; Maximum size for $PUTMSG
00000400 0000 69 K_BUFSIZ = 1024 ; Buffer size
FFFFFFF8 0000 70 DSC = -8 ; Offset from FP of descriptor
FFFFFFF8 0000 71 LEN = -8 ; Offset from FP of length
FFFFFFFC 0000 72 ADR = -4 ; Offset from FP of address
0A 0D 0000 73 CRLF: .BYTE ^XOD, ^XOA ; Carraige-return, Line-feed
0002 74
003C 0002 75 .ENTRY SOR$SOUTPUT, ^M<R2,R3,R4,R5>
0004 76
0004 77 ; Allocate a descriptor and a buffer on the stack
0004 78
FBF8 CE 9F 0004 79 PUSHAB -K_BUFSIZ-8(SP) ; Push buffer address
00000400 8F DD 0008 80 PUSHL #K_BUFSIZ ; Push buffer length
5E 04 AE D0 000E 81 MOVL 4(SP), SP ; Allocate the buffer
08 AC 9F 0012 82 PUSHAB PRMLST(AP) ; Push address of parameter list
F8 AD 9F 0015 83 PUSHAB DSC(FP) ; Push address of buffer descriptor
F8 AD 9F 0018 84 PUSHAB LEN(FP) ; Push address for returned length
04 AC DD 001B 85 PUSHL CTRSTR(AP) ; Push address of CTRSTR descriptor
00000000'GF 04 FB 001E 86 CALLS #4, G^SYS$FAOL ; Format the output
7A 50 E9 0025 87 BLBC R0, 99$ ; Check status
0028 88
0028 89 ; Form the message vector on the stack
0028 90
F8 AD 9F 0028 91 PUSHAB DSC(FP) ; Push address of descriptor
01 DD 002B 92 PUSHL #^X00000001 ; Push FAO count, Message flags
00091130 8F DD 002D 93 PUSHL #9@16+SHR$_TEXT ; Push message ID
00010003 8F DD 0033 94 PUSHL #^X00010003 ; Push count of longwords, Flags (only message)
0039 95
0039 96 ; Form the argument list on the stack
0039 97
7E 7C 0039 98 CLRQ -(SP) ; Two null parameters
7E D4 003B 99 CLRL -(SP) ; One null parameter
0C AE 9F 003D 100 PUSHAB 12(SP) ; Address of message vector
04 DD 0040 101 PUSHL #4 ; Number of arguments
0042 102
0042 103 ; See whether one $PUTMSG will suffice
0042 104
54 D4 0042 105 10$: CLRL R4 ; Clear the remaining length
00000001 0044 106 .IF NE, OPT
00FF 8F F8 AD B1 0044 107 CMPW LEN(FP), #K_PUTMSG ; Short enough for one $PUTMSG?
43 15 004A 108 BLEQ 90$ ; Branch if short enough
53 FC AD D0 004C 109 MOVL ADR(FP), R3 ; Get address of string
52 000000FF 8F D0 0050 110 MOVL #K_PUTMSG, R2 ; Get maximum length
54 52 7D 0057 111 20$: MOVQ R2, R4 ; Save descriptor of remaining bytes
63 52 A2 AF 02 39 005A 112 MATCHC #2, CRLF, R2, (R3) ; Find a CRLF
```

			F5	13	0060	113		BEQL	20\$; Branch if found
	FC	AD	55	D1	0062	114	30\$:	CMPL	R5, ADR(FP)		; Same address?
			11	13	0066	115		BEQL	40\$; Branch if no CRLF found
50	55	FC	AD	C3	0068	116		SUBL3	ADR(FP), R5, R0		; Compute length to output (plus 2)
54	F8	AD	50	C3	006D	117		SUBL3	R0, LEN(FP), R4		; Compute remaining length
F8	AD	50	02	C3	0072	118		SUBL3	#2, R0, LEN(FP)		; Compute length to output
			16	11	0077	119		BRB	90\$; Go output the text
					0079	120		.ENDC			
			00000001		0079	121		.IF	EQ, OPT		
					0079	122		MOVL	ADR(FP), R5		
					0079	123		.ENDC			
65	F8	AD	83	AF	02	39	0079	MATCHC	#2, CRLF, LEN(FP), (R5)		; Find first CRLF anywhere
			F8	AD	52	C2	0080	SUBL2	R2, LEN(FP)		; Subtract the remaining length
			F8	AD	02	C2	0084	SUBL2	#2, LEN(FP)		; And two bytes for the CRLF
			F8	AD	50	C0	0088	ADDL2	R0, LEN(FP)		; Add two bytes back if CRLF not found
			54	52	7D	008C	128	MOVQ	R2, R4		; Save string descriptor of remainder
00000000	'GF		6E	FA	008F	129	90\$:	CALLG	(SP), G^SYSPUTMSG		; Put out the message
			09	50	E9	0096	130	BLBC	R0, 99\$; Check status
	F8	AD	54	7D	0099	131		MOVQ	R4, DSC(FP)		; Move remainder into the descriptor
			F8	AD	D5	009D	132	TSTL	LEN(FP)		; Is remaining length zero?
			A0	12	00A0	133		BNEQ	10\$; No, go output some more
				04	00A2	134	99\$:	RET			; Return
					00A3	135					
					00A3	136		.END			

SOR\$OUTPUT
Symbol table

Output text

M 11

16-SEP-1984 01:18:42
5-SEP-1984 03:37:06

VAX/VMS Macro V04-00
[SORT32.SRC]SOROUTPUT.MAR;1

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ADR	=	FFFFFFFFC		
CRLF	=	00000000	R	02
CTRSTR	=	00000004		
DSC	=	FFFFFFFF8		
K_BUFSIZ	=	00000400		
K_PUTMSG	=	000000FF		
LEN	=	FFFFFFFF8		
OPT	=	00000001		
PRMLST	=	00000008		
SHR\$ TEXT	=	00001130		
SOR\$OUTPUT	=	00000002	RG	02
SYSSFAOL	*****		X	00
SYSSPUTMSG	*****		X	00

+-----+
! Psect synopsis !
+-----+

PSECT name	Allocation	PSECT No.	Attributes															
. ABS .	00000000 (0.)	00 (0.)	NOPIC	USR	CON	ABS	LCL	NOSHR	NOEXE	NORD	NOWRT	NOVEC	BYTE					
\$ABSS	00000000 (0.)	01 (1.)	NOPIC	USR	CON	ABS	LCL	NOSHR	EXE	RD	WRT	NOVEC	BYTE					
SOR\$RO_CODE	000000A3 (163.)	02 (2.)	PIC	USR	CON	REL	LCL	SHR	EXE	RD	NOWRT	NOVEC	LONG					

+-----+
! Performance indicators !
+-----+

Phase	Page faults	CPU Time	Elapsed Time
Initialization	29	00:00:00.06	00:00:00.77
Command processing	119	00:00:00.48	00:00:03.59
Pass 1	130	00:00:01.60	00:00:06.09
Symbol table sort	0	00:00:00.14	00:00:00.51
Pass 2	42	00:00:00.40	00:00:01.33
Symbol table output	3	00:00:00.02	00:00:00.03
Psect synopsis output	2	00:00:00.02	00:00:00.02
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	327	00:00:02.73	00:00:12.35

The working set limit was 1050 pages.
7520 bytes (15 pages) of virtual memory were used to buffer the intermediate code.
There were 10 pages of symbol table space allocated to hold 121 non-local and 6 local symbols.
136 source lines were read in Pass 1, producing 13 object records in Pass 2.
8 pages of virtual memory were used to define 7 macros.

+-----+
! Macro library statistics !
+-----+

Macro library name	Macros defined
_\$255\$DUA28:[SYSLIB]STARLET.MLB;2.	4

168 GETS were required to define 4 macros.

There were no errors, warnings or information messages.

SORSOUTPUT
VAX-11 Macro Run Statistics

Output text

N 11

16-SEP-1984 01:18:42 VAX/VMS Macro V04-00
5-SEP-1984 03:37:06 [SORT32.SRC]SORSOUTPUT.MAR;1

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MACRO/DISABLE=TRACE/LIS=LISS:SORSOUTPUT/OBJ=OBJ\$:SORSOUTPUT MSRC\$:SORSOUTPUT/UPDATE=(ENH\$:SORSOUTPUT)

SORS
VO

.....

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